

WEST

Generate Collection

Print

Search Results - Record(s) 1 through 50 of 57 returned.

☐ 1. Document ID: US 20030121978 A1

L6: Entry 1 of 57

File: PGPB

Jul 3, 2003

DOCUMENT-IDENTIFIER: US 20030121978 A1

TITLE: Compact matrix code and one-touch device and method for code reading

Summary of Invention Paragraph (6):

[0004] Most bar codes can be categorized as being either one-dimensional, stacked, or matrix codes according to how the information is stored, although some codes combine elements from more than one of these categories, while others use half-tones, colors or other techniques to increase the information density and improve reliability. One-dimensional codes usually store information according to variations in the width of printed bars, which can be arranged in many configurations. One-dimensional codes lend themselves to reading by scanning, in which the code and an optical reader are moved relative to one another in a preferred direction. During scanning, temporal variations of reflected light is detected which is then used to determine variations of code bar widths. Linear one-dimensional bar codes consist of bars of varying width and spacing arranged in a rectangular space. Other one-dimensional codes have been developed which encode data in concentric circular rings and as radial spokes in a circular pattern. While one-dimensional codes can be robust, allowing for printing and reading on a wide variety of materials, the information density is usually low and there is a limited range of scanning directions and speeds that allow for accurate reading of the code. To account for scan speed, these codes usually incorporate clocking signals within the bar code to determining scan speed as well as code content.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KBWC	Draw Desc	Image
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------	--------	------	-----------	-------

☐ 2. Document ID: US 20030069134 A1

L6: Entry 2 of 57

File: PGPB

Apr 10, 2003

DOCUMENT-IDENTIFIER: US 20030069134 A1

TITLE: Multicolor image-forming material and multicolor image-forming method

Detail Description Paragraph (109):

[0127] The preceding apparatus is connected to a platemaking system, so that the system exerting function as color proof comes to be built up. The system needs outputting printed products having image qualities as similar as possible to printed matter outputted from the platemaking data from the aforesaid recording apparatus. Herein, software for allowing color and halftone dots to approach those of printed matter is needed. Specific examples of the connection are shown below.

Detail Description Paragraph (110):

[0128] In the case where the proof of printed matter is taken from the platemaking system (e.g., Celebra produced by Fuji Photo FilmCo., Ltd.), the connection of the system is as follows. The CTP (computer to plate) system is connected to the platemaking system. The printing plate outputted from this is applied to a printing machine to obtain final printed matter. Although the aforesaid recording apparatus

is connected as the color proof to the platemaking system, the PD system (registered trademark) is placed between these as proof drive software for allowing the color and the halftone dots to approach those of printed matter.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw Desc	Image
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------	--------	------	-----------	-------

☐ 3. Document ID: US 20030068572 A1

L6: Entry 3 of 57

File: PGPB

Apr 10, 2003

DOCUMENT-IDENTIFIER: US 20030068572 A1
TITLE: Multicolor image-forming material

Detail Description Paragraph (144):

[0182] The above-described devices are connected on a plate-making system and thereby allowed to exert the function as a color proof. The system is required to output, from the proof, a print having an image quality as close as that of a printed matter output based on certain plate-making data and for realizing this, a software for approximating colors and halftone dots to those of a printed matter is necessary. The connection example is specifically described below.

Detail Description Paragraph (145):

[0183] In the case of preparing a proof of a printed matter from a plate-making system Celebra.TM. manufactured by Fuji Photo Film Co., Ltd., the system is connected as follows. A CTP (computer-to-plate) system is connected to Celebra. A printing plate output therefrom is mounted on a press and a final printed matter is obtained. The Celebra is connected with a color proof Luxel FINALPROOF 5600 (hereinafter sometimes referred to as "FINALPROOF") manufactured by Fuji Photo Film Co., Ltd. which is the above-described recording device, but PD System.TM. manufactured by Fuji Photo Film Co., Ltd. is connected therebetween as a proof drive software for approximating colors and halftone dots to those of a printed matter.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC	Draw Desc	Image
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------	------	-----------	-------

☐ 4. Document ID: US 20030054142 A1

L6: Entry 4 of 57

File: PGPB

Mar 20, 2003

DOCUMENT-IDENTIFIER: US 20030054142 A1
TITLE: Multicolor image forming material and method for forming multicolor image

Detail Description Paragraph (124):

[0191] The function as a color proof can be exhibited by connecting the device described above to a plate making system. As the system, printed matter having image quality extremely close to that of printed matter supplied from certain plate making data is required to be supplied from the proof. Then, a software for bringing color and halftone dots close to the printed matter is necessary. A specific connecting example will be introduced.

Detail Description Paragraph (125):

[0192] When a proof of printed matter from a plate making system, Celebra.TM. manufactured by Fuji Photo Film Co., Ltd., is taken, system connection is as follows. A CTP (computer to plate) system is connected to Celebra. A printing plate supplied therefrom is subjected to a printing machine, thereby obtaining final printed matter. As the color proof, Luxel FINALPROOF 5600 (hereinafter also referred

to as FINALPROOF) manufactured by Fuji Photo Film Co., Ltd., which is the above-mentioned recording device, is connected to Celebra. During that, PD system.sup.TD manufactured by Fuji Photo Film Co., Ltd. is connected as a proof drive software for bringing color and halftone dots close to the printed matter.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWMC	Draw Desc	Image
------	-----------	-------

☐ 5. Document ID: US 20030014823 A1

L6: Entry 5 of 57

File: PGPB

Jan 23, 2003

DOCUMENT-IDENTIFIER: US 20030014823 A1
TITLE: Carpet constructions and methods

Summary of Invention Paragraph (18):

[0018] The term "dithering" shall refer to a computer-generated reconstruction of an image, using only pixels having colors found in a pre-defined "dither palette". Dithering software generates, in pixel-wise fashion, an image in which each pixel is assigned a color from the dither palette that, when the image is viewed from a distance, best approximates the target color at that location within the pattern.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWMC	Draw Desc	Image
------	-----------	-------

☐ 6. Document ID: US 20030007004 A1

L6: Entry 6 of 57

File: PGPB

Jan 9, 2003

DOCUMENT-IDENTIFIER: US 20030007004 A1
TITLE: Differentiating dialog box boundaries by implementing reserved colors

Summary of Invention Paragraph (7):

[0006] By way of example, when an end user using an 8-bit display system implements a graphics entity having an 8-bit color value, the 8-bit color value is used as an index to a false color table, thus generating a false index value. Generally, the false color table includes each of the 256 colors of the 8-bit color table such that each of the indexes 0 to 255 of the false color table respectively correspond to colors 1 through 256 of the 8-bit color table. Next, the false index value is used as an index to a color table wherein each of the indexes 0 to 215 of the color table respectively corresponds to each of the cross-platform compatible colors 1 through 216. In a like manner, each of the indexes 216 to 255 of the color table respectively corresponds to each of the reserved colors 217-256 of the 8-bit color table. At this stage, a false index value that corresponds to a cross-platform compatible color index is mapped to its corresponding cross-platform compatible color. However, any false index value that corresponds to a reserved color value is mapped to a previously assigned cross-platform compatible color. Simply stated, when the end user has selected a cross-platform compatible color, that cross-platform compatible color is ultimately displayed. However, if the end user has chosen one of the reserved colors, the underlying software or the residing operating system detects and corrects such error by mapping the selected reserved color to a previously determined cross-platform compatible color or by dithering the color.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWMC	Draw Desc	Image
------	-----------	-------

☐ 7. Document ID: US 20020162176 A1

L6: Entry 7 of 57

File: PGPB

Nov 7, 2002

DOCUMENT-IDENTIFIER: US 20020162176 A1

TITLE: Patterning system using a limited number of process colors

Detail Description Paragraph (13):

[0039] Following the introduction or generation of the digitized image that will form the pattern or design to be reproduced on the substrate, the graphics arts software can generate a digitally processed, dithered image using the dithering palette developed in the prior step. In that dithered image, all individual pixels carry a process color or an appropriate blend of a process color. Target colors that are not matched to either of these sets of colors are synthesized by the dithering algorithm in the graphics arts software. The result is a displayed version of the desired pattern in which the displayed image closely resembles the appearance of the patterned substrate. In that displayed image, all target colors of the pattern have been reproduced (to a greater or lesser degree of accuracy, depending on the number of process colorants available, the desired resolution or degree of heather, and the inherent color of the substrate, among other factors) using only process colorants and appropriate blends of process colorants. Additionally, due to the use of the test blanket, the designer has some assurance that displayed process colors (and appropriate, specified blends of such colors) will correspond closely to the colors actually produced by the patterning device as it patterns the selected substrate.

Detail Description Paragraph (14):

[0040] Upon approval of the designer, the digitally processed computer display image, as expressed in the colors of the dither palette by the graphics arts software, may be translated into specifications or operating instructions for the patterning device. This process, when used with appropriately compatible automated hardware, is capable of providing for the automated manufacture of the patterned substrate, as that patterned substrate appeared at the designer's monitor.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 8. Document ID: US 20020083121 A1

L6: Entry 8 of 57

File: PGPB

Jun 27, 2002

DOCUMENT-IDENTIFIER: US 20020083121 A1

TITLE: System for device-to-device pervasive digital output

Detail Description Paragraph (35):

[0076] Not all situations require uploading an entire or complete driver or application to output manager 308 or information apparatus 100. In some implementations uploading only a software component may be sufficient. For example, there are many inkjet printers that commonly use one-bit or multi-bit CMYK printing technology, and sometimes have similar resolutions. An information apparatus 100 may pre-install a more generic printer driver, where this printer driver contains the device independent portion of the software code, algorithms, and data that is common or can be used for this entire class of printers. Device-independent code may include, for example, a rasterization process (including half-toning and color management methods) and image enhancement of the digital document that is suitable for use with this entire class of printers. In this example, it is feasible to upload only a smaller software component or data that includes the device-dependent components for a particular printer or output device 140. The device-dependent portion or component or data may include, but is not limited to, color tables, halftoning tables, output resolution, bit depth, compression/decompression methods,

color space conversion, encoding algorithms or conversion software that is specific to that printer or output device 140.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWAC	Draw Desc	Image
------	-----------	-------

☐ 9. Document ID: US 20020059415 A1

L6: Entry 9 of 57

File: PGPB

May 16, 2002

DOCUMENT-IDENTIFIER: US 20020059415 A1

TITLE: Manager for device-to-device pervasive digital output

Detail Description Paragraph (42):

[0083] Not all situations require uploading an entire or complete driver or application to output manager 308 or information apparatus 100. In some implementations uploading only a software component may be sufficient. For example, there are many inkjet printers that commonly use one-bit or multi-bit CMYK printing technology, and sometimes have similar resolutions. An information apparatus 100 may pre-install a more generic printer driver, where this printer driver contains the device independent portion of the software code, algorithms, and data that is common or can be used for this entire class of printers. Device-independent code may include, for example, a rasterization process (including half-toning and color management methods) and image enhancement of the digital document that is suitable for use with this entire class of printers. In this example, it is feasible to upload only a smaller software component or data that includes the device-dependent components for a particular printer or output device 140. The device-dependent portion or component or data may include, but is not limited to, color tables, halftoning tables, output resolution, bit depth, compression/decompression methods, color space conversion, encoding algorithms or conversion software that is specific to that printer or output device 140.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWAC	Draw Desc	Image
------	-----------	-------

☐ 10. Document ID: US 20020055984 A1

L6: Entry 10 of 57

File: PGPB

May 9, 2002

DOCUMENT-IDENTIFIER: US 20020055984 A1

TITLE: Method for device-to-device pervasive digital output

Detail Description Paragraph (35):

[0076] Not all situations require uploading an entire or complete driver or application to output manager 308 or information apparatus 100. In some implementations uploading only a software component may be sufficient. For example, there are many inkjet printers that commonly use one-bit or multi-bit CMYK printing technology, and sometimes have similar resolutions. An information apparatus 100 may pre-install a more generic printer driver, where this printer driver contains the device independent portion of the software code, algorithms, and data that is common or can be used for this entire class of printers. Device-independent code may include, for example, a rasterization process (including half-toning and color management methods) and image enhancement of the digital document that is suitable for use with this entire class of printers. In this example, it is feasible to upload only a smaller software component or data that includes the device-dependent components for a particular printer or output device 140. The device-dependent portion or component or data may include, but is not limited to, color tables,

halftoning tables, output resolution, bit depth, compression/decompression methods, color space conversion, encoding algorithms or conversion software that is specific to that printer or output device 140.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 11. Document ID: US 20020051200 A1

L6: Entry 11 of 57

File: PGPB

May 2, 2002

DOCUMENT-IDENTIFIER: US 20020051200 A1

TITLE: Controller for device-to-device pervasive digital output

Detail Description Paragraph (35):

[0077] Not all situations require uploading an entire or complete driver or application to output manager 308 or information apparatus 100. In some implementations uploading only a software component may be sufficient. For example, there are many inkjet printers that commonly use one-bit or multi-bit CMYK printing technology, and sometimes have similar resolutions. An information apparatus 100 may pre-install a more generic printer driver, where this printer driver contains the device independent portion of the software code, algorithms, and data that is common or can be used for this entire class of printers. Device-independent code may include, for example, a rasterization process (including half-toning and color management methods) and image enhancement of the digital document that is suitable for use with this entire class of printers. In this example, it is feasible to upload only a smaller software component or data that includes the device-dependent components for a particular printer or output device 140. The device-dependent portion or component or data may include, but is not limited to, color tables, halftoning tables, output resolution, bit depth, compression/decompression methods, color space conversion, encoding algorithms or conversion software that is specific to that printer or output device 140.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 12. Document ID: US 20020008880 A1

L6: Entry 12 of 57

File: PGPB

Jan 24, 2002

DOCUMENT-IDENTIFIER: US 20020008880 A1

TITLE: Proofing method, apparatus, and computer software product matching color and halftone screen properties

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 13. Document ID: US 6490696 B1

L6: Entry 13 of 57

File: USPT

Dec 3, 2002

DOCUMENT-IDENTIFIER: US 6490696 B1

TITLE: System and method for printer output regression testing using display lists

Detailed Description Text (13):

If the new and reference image data match, the DL regression testing module 9 immediately moves to compare 54 the next attribute, in this case the image scaling attributes. Once again, if the new image scaling attribute and the reference image scaling attribute are not equivalent, the new image scaling attributes are stored in the comparison results report 300 along with identified differences 101 between the new image scaling attributes and the reference image scaling attributes. In a similar manner, the DL regression testing module 9 will compare 56 the new image position against the reference image position to verify either equivalence or difference. Attributes specified for the image objects may be expanded to include additional attributes which describe the image object and are included in the generated display list, such as color, pattern, halftone, transparency and any other attribute included in a specific software program or PDL interpreter.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KVMC	Draw Desc	Image
------	-----------	-------

☐ 14. Document ID: US 6390586 B1

L6: Entry 14 of 57

File: USPT

May 21, 2002

DOCUMENT-IDENTIFIER: US 6390586 B1

**** See image for Certificate of Correction ****

TITLE: Recording apparatus, recording method, information processing apparatus and recording medium

Detailed Description Text (150):

In case of a pictorial image, the image data prepared and edited on the application software 3102 are transferred, in the form of multi-value RGB signals, to the printer driver 3103. On the multi-value RGB signals received from the application software 3102, the printer driver 3103 executes a color process and a halftone process and converts such signals normally into binary C (cyan), M (magenta), Y (yellow) and K (black) signals, which are supplied to an interface of the host computer 3100 to the recording apparatus 3200 or an interface to a filing memory device.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KVMC	Draw Desc	Image
------	-----------	-------

☐ 15. Document ID: US 6335727 B1

L6: Entry 15 of 57

File: USPT

Jan 1, 2002

DOCUMENT-IDENTIFIER: US 6335727 B1

TITLE: Information input device, position information holding device, and position recognizing system including them

Detailed Description Text (35):

As shown in FIG. 13, a writing attribute code (string) is inserted in a writing information code (string) so as to discriminate a writing attribute such as a writing width, a writing density, and the like. The writing attribute is changed by performing a specific operation to the operating section 15 by a user when the pen tip 60 is separated from a paper sheet. The writing attribute code is distinguished from a normal writing information code since it starts with a special information code (-2, -2). The contents of the writing attribute include attribute information such as a line width, density, and the like, which are required when a written image

is reproduced by a display. In this case, for example, attribute information of the density consists of a color conversion code used for reproducing an image on a multi-color display, and a dither conversion code used for reproducing an image on a monochrome display. The end of the writing attribute code is identified by an end code (-1, -1) like in the writing information code.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KIMC	Draw Desc	Image
------	-----------	-------

☐ 16. Document ID: US 6331898 B1

L6: Entry 16 of 57

File: USPT

Dec 18, 2001

DOCUMENT-IDENTIFIER: US 6331898 B1

TITLE: Encoded data printing apparatus and method for printing a code and an image on the same medium

CLAIMS:

2. A code printing apparatus according to claim 1, wherein said controller converts only the colors of pixels which are halftone pixels.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KIMC	Draw Desc	Image
------	-----------	-------

☐ 17. Document ID: US 6169608 B1

L6: Entry 17 of 57

File: USPT

Jan 2, 2001

DOCUMENT-IDENTIFIER: US 6169608 B1

TITLE: Method of converting continuous tone color image into pseudo-halftone binary color image

Detailed Description Text (126):

With this structure, the color printer 4 receives character code data and command data via the interface 26 from the host computer. The color printer 4 can convert a continuous tone color image represented by the character code data into a pseudo-halftone color image through the binary conversion process in the same manner as described above. Then, the color printer 4 controls the printing mechanism 25 to print the obtained pseudo-halftone color image. Thus, the color printer 4 can obtain advantages the same as those of the above-described embodiments.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KIMC	Draw Desc	Image
------	-----------	-------

☐ 18. Document ID: US 6124945 A

L6: Entry 18 of 57

File: USPT

Sep 26, 2000

DOCUMENT-IDENTIFIER: US 6124945 A

TITLE: Color image transfer processing apparatus and method, color image reconstruction processing apparatus and method, and color image transfer system

Brief Summary Text (11):

In the pallet transfer system according to such an area division, a color deviation in each area can be expressed and the reproducibility of the color is improved as compared with that in case of selecting the representative color in the whole image data. Since the subtractive color pallet is formed by selecting the representative color every area, however, there are problems such that even in case of the same color, the representative color differs every area, and even if the same color is used in two areas before and after the boundary of the areas, when the color image is reconstructed by the representative colors from the halftone codes, a color deviation occurs at the area boundary.

Brief Summary Text (13):

According to the invention, there is provided a color image transfer processing apparatus and method for reducing a color deviation in a boundary portion when a color pixel is converted to a halftone code of an entry number of a subtractive color pallet every divided area of a color image, the halftone code is transferred together with a representative color, and the image is reconstructed.

Detailed Description Text (9):

An MPU 172 for controller is provided for the controller 162. A printer I/F processing unit 12 serving as a transfer destination of the color image transferring process according to the invention is provided for the MPU 172 for controller and is connected to, for example, a personal computer 192 as an upper apparatus through a control connector 176. The personal computer 192 has a driver 10 which functions as a color image transfer processing apparatus of the invention for transferring color image data which is provided from an arbitrary application program 194 to the color printing apparatus. The driver 10 is connected to the printer I/F processing unit 12 provided in the controller 162 on the printing apparatus side through a personal computer connector 198. In this instance, color image data on the application program 194 of the personal computer 192 is, for example, RGB data. On the other hand, color image data on the color printing apparatus side is YMCK data. Therefore, a color converting function for converting RGB data transferred from the driver into YMCK data for printing is provided for the I/F processing unit 12 of the printing apparatus side. The driver 10 converts 3-byte RGB pixel data of the color image into a halftone code of one byte expressed by the entry number of the subtractive color pallet and transfers the halftone code together with the pallet representative color (RGB pixel data of three bytes) to the printer I/F processing unit 12. In the printer I/F processing unit 12, the color image data expressed by the pallet representative color is reconstructed from the halftone code of the entry number by referring to the subtractive color pallet. Image memories 182-1, 182-2, 182-3, and 182-4 for developing the image data of Y, M, C, and K obtained by the color conversion of the RGB image data transferred from the personal computer 192 into pixel data (dot data) and storing are provided for the MPU 172 of the controller 162. The MPU 172 has an address designating unit 184 in order to perform an address designation when the color pixel data of YMCK is stored into the image memories 182-1 to 182-4, respectively.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KIMC	Draw Desc	Image
------	-----------	-------

☐ 19. Document ID: US 6008796 A

L6: Entry 19 of 57

File: USPT

Dec 28, 1999

DOCUMENT-IDENTIFIER: US 6008796 A

TITLE: Software-based dithering method and apparatus using ramp probability logic

CLAIMS:

22. A computer readable storage medium for storing an executable set of software instructions which, when inserted into a host computer system, is capable of controlling the operation of the host computer, said software instructions being operable to dither pixel colors in a graphics system and wherein the color of the pixels is represented by color values having fewer than eight bits, said software instructions including:

means for determining a first index value to a look-up table;

means for providing a look-up table value from said look-up table based on said first index value;

means for determining a ramp probability value;

means for mapping said look-up table value to a bit position within said ramp probability value; and

means for selecting a dither color value in said graphics system.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 20. Document ID: US 5982924 A

L6: Entry 20 of 57

File: USPT

Nov 9, 1999

DOCUMENT-IDENTIFIER: US 5982924 A

TITLE: Method and system for reproducing color images as duotones

Detailed Description Text (63):

The duotone mapping described above assumed that two inks were given. In the more general cases, neither ink or just one ink is specified by the user. The goal of the software program comprising the present invention is to find one or more good pairs of ink colors for producing a duotone of a given full color image, in addition to finding the halftone separations for those colors. A good pair of ink colors is one for which the duotone mapping process produces an image that is as close as possible to the original full-color image. The "closeness of two images" is defined as the pixel-wise L_{sup.2} distance measured in a perceptually uniform color space. Thus, the selection of one or two ink colors amounts to an optimization problem whose goal (or objective) is a function of the original image and ink colors. The preferred embodiment uses a simulated annealing process to solve this optimization problem.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 21. Document ID: US 5894799 A

L6: Entry 21 of 57

File: USPT

Apr 20, 1999

DOCUMENT-IDENTIFIER: US 5894799 A

TITLE: Element for cushioning a flexographic printing plate

Detailed Description Text (33):

A printing plate was made from a CYREL.RTM. flexographic printing element type EXL67, in which a relief image was formed by conventional method of imagewise

exposure through a mask, washout and aftertreatment as explained above for the cushion layer. Hereto, the mask was made having six segments, but each segment was the same so that a pattern of the relief image in the plate repeated six times. Each segment contained grey scales of line screens of 65, 85, 120 and 150 lines per inch; fine type to bold type ranging from 2 point to 10 point; a large solid area; bar codes oriented in web direction and in cross-web direction based on the direction of printing; and a half-tone single color pictorial image.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☒ 22. Document ID: US 5812744 A

L6: Entry 22 of 57

File: USPT

Sep 22, 1998

DOCUMENT-IDENTIFIER: US 5812744 A

TITLE: Joint design of dither matrices for a set of colorants

Detailed Description Text (55):

The system used to generate a color halftone image from a color continuous tone image using the color dither matrices that have been designed includes: a first memory means 1240 for storing color components for each pixel in the color image; a second memory means 1250 for storing parameters of a plurality of dither matrices 1210, a dither matrix corresponding to each of said color components, wherein the color fluctuation in each of the dither matrices is minimized; and a processor means 1260 coupled to the first memory means for comparing the dither matrices with each color components, wherein responsive to the comparison a color component is selected for printing. The first or second memory means for storing the color components, the dither matrices, or the software used by the processor means may be stored on any storage medium readable by a computer.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 23. Document ID: US 5727137 A

L6: Entry 23 of 57

File: USPT

Mar 10, 1998

DOCUMENT-IDENTIFIER: US 5727137 A

TITLE: Printer driver architecture for reducing band memory

CLAIMS:

12. A computer program product for use with an image recording system comprising an information processor in communication with a printer, the computer program product comprising:

a computer useable medium defining computer readable program code to receive print image data corresponding to an image to be printed on the printer of the image recording system, the print image data including at least one print object;

a computer useable medium defining computer readable program code to extract a band of the received print image data defining at least a portion of the print object;

a computer useable medium defining computer readable program code to store the extracted band into a first memory of the image recording system, the extracted band having a first data size;

a computer useable medium defining computer readable program code to color process the extracted band stored in the first memory;

a computer useable medium defining computer readable program code to dither the color processed band;

a computer useable medium defining computer readable program code to store the dithered band into a second memory of the image recording system, the dithered band having a second data size substantially less than the first data size; and

a computer useable medium defining computer readable program code to render the dithered band stored in the second memory to generate a printable bitmap thereof.

20. An image processing system, comprising:

an information processor;

a first memory in communication with said information processor, said first memory containing print image data corresponding to an image to be printed, the print image data including at least one print object;

a second memory in communication with said information processor, comprising:

computer readable program code causing said information processor to extract a band of the print image data contained in said first memory, the extracted band defining at least a portion of the print object;

computer readable program code causing said information processor to store the extracted band into the second memory, the extracted band having a first data size;

computer readable program code causing said information processor to color process the extracted band stored in the second memory;

computer readable program code causing said information processor to dither the color processed band;

computer readable program code causing said information processor to store the dithered band into a third memory, the dithered band having a data size substantially less than the data size of the extracted band; and

computer readable program code causing said information processor to render the dithered band stored in the third memory to generate a printable bitmap thereof.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KNOC	Draw Desc	Image
------	-----------	-------

☐ 24. Document ID: US 5659164 A

L6: Entry 24 of 57

File: USPT

Aug 19, 1997

DOCUMENT-IDENTIFIER: US 5659164 A

TITLE: Method of and system for apparatus for two-way automatically creating, identifying, routing and storing digitally scanned documents

Detailed Description Text (6):

Referring to a sample cover page presented in FIG. 4, the bar code is shown followed by user-selectable boxes the marking of which indicates to the MRI reader, scan parameter settings ("FAX--resolution setting; "PICT--dither setting; and

"COLOR"--mode setting), and whether there is to be further OCR (or other) processing.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 25. Document ID: US 5634091 A

L6: Entry 25 of 57

File: USPT

May 27, 1997

DOCUMENT-IDENTIFIER: US 5634091 A
TITLE: Digital page imaging system

Brief Summary Text (7):

More recently, customers have used desktop publishing software to create the pages for documentation with all text, graphics, half-tone and spot colors in place. While this permitted the customer to proof the individual pages prior to printing, the manual imposition process remained.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 26. Document ID: US 5576849 A

L6: Entry 26 of 57

File: USPT

Nov 19, 1996

DOCUMENT-IDENTIFIER: US 5576849 A
TITLE: Image data transformation apparatus and image entry apparatus

Detailed Description Text (23):

Furthermore, when the data selection code Q is set to 3, it is indicated to select color dithered data. Namely, DIT.sub.-- R data (DR data), DIT.sub.-- G data (DG data), and DIT.sub.-- B data (DB data) are read respectively from the binary data buffers 315, 325, and 335 to be outputted as binary image data associated with red, green, and blue.

Detailed Description Text (41):

Furthermore, when the data selection code Q is set to 3, it is indicated to select color dithered data and hence DIT.sub.-- R data (DR data), DIT.sub.-- G (DG data), and DIT B (DB data) are read respectively from the binary data buffers 315, 325, and 335 to be outputted as binary image data corresponding to red, green, and blue.

Detailed Description Text (43):

In addition, when the data selection code Q is set to 5, it is designated to select multi-color dithered data and hence DIG.sub.-- G data (DG data) is read from the buffer 325 to be outputted as binary image data corresponding to red and green.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 27. Document ID: US 5553200 A

L6: Entry 27 of 57

File: USPT

Sep 3, 1996

DOCUMENT-IDENTIFIER: US 5553200 A

TITLE: Method and apparatus for providing bit-rate reduction and reconstruction of image data using dither arrays

Detailed Description Text (55):

with $k=(i)\bmod(K)$ and $l=(j)\bmod(L)$, one notes that in addition to C, one only needs to know the log.sub.2 K least significant bits in the computer representation of integer i (this gives k) and the log.sub.2 L least significant bits in the computer representation of integer j (this gives l). Thus an address to the LUT may be formed from code C, the log.sub.2 K least significant bits in the computer representation of integer i, and the log.sub.2 L least significant bits in the computer representation of integer j. In the preferred embodiment using the LUT, for the case of 8 bits per pixel per color component, dither arrays with $K=L=64=2.\sup.6$ are used for bit-rate reduction by a factor of two to give 4-bit code words, and dither arrays with $K=L=128=2.\sup.7$ are used for bit-rate reduction by a factor of four to give 2-bit code words. In each case, 16 bits is sufficient to address LUT 601.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KIMC	Draw Desc	Image
------	-----------	-------

☐ 28. Document ID: US 5398283 A

L6: Entry 28 of 57

File: USPT

Mar 14, 1995

DOCUMENT-IDENTIFIER: US 5398283 A

TITLE: Encryption device

Detailed Description Text (10):

Half-tone and color encrypted documents can be printed with an ordinary black-and-white printer, e.g., by printing single bits encoded as black-and-white symbols as described below. A symbol indicating "halftone" or "color" should proceed each group of symbols representing the encrypted input pixel, and each group of symbols should either be printed twice, or once with a checksum, to ensure correct interpretation of the encrypted codes and to properly synchronize the decryption algorithm to produce the decrypted output pixels. Of course, to properly reproduce encrypted halftone or color images, a half-tone or color printer is required.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KIMC	Draw Desc	Image
------	-----------	-------

☐ 29. Document ID: US 5388204 A

L6: Entry 29 of 57

File: USPT

Feb 7, 1995

DOCUMENT-IDENTIFIER: US 5388204 A

TITLE: Method of and apparatus for combining linework data

Detailed Description Text (15):

(i) Color table memory 56 temporarily stores color codes and following data related to each color code: a priority; color data or halftone dot area rates of respective four primary colors, that is, yellow (Y), magenta (M), cyan (K), and black (K); and transparency. The priority and the transparency will be explained later in detail.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 30. Document ID: US 5375191 A

L6: Entry 30 of 57

File: USPT

Dec 20, 1994

DOCUMENT-IDENTIFIER: US 5375191 A

TITLE: Method for approximating full resolution color printing

Brief Summary Text (6):

Other printing attempts to print secondary colors include various dithering or error diffusion techniques that require a great deal of software processing, making them relatively slow and complex.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 31. Document ID: US 5365364 A

L6: Entry 31 of 57

File: USPT

Nov 15, 1994

DOCUMENT-IDENTIFIER: US 5365364 A

TITLE: Optical scanner and printer

Brief Summary Text (3):

There are numerous applications for high speed optical scanners and printers including non-impact printing, color imaging, digitizing, phototypesetting, bar code reading, inspection, microscopy, photolithography, PC board generation, halftone and color separation. The manipulation and processing of the digitized data acquired from scanning and stored in mass memory units, and its subsequent printing onto film, xerographic and other media offer numerous opportunities for commercial, industrial and military products.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 32. Document ID: US 5321749 A

L6: Entry 32 of 57

File: USPT

Jun 14, 1994

DOCUMENT-IDENTIFIER: US 5321749 A

TITLE: Encryption device

Detailed Description Text (10):

Half-tone and color encrypted documents can be printed with an ordinary black-and-white printer, e.g., by printing single bits encoded as black-and white symbols as described below. A symbol indicating "half-tone" or "color" should proceed each group of symbols representing the encrypted input pixel, and each group of symbols should either be printed twice, or once with a checksum, to ensure correct interpretation of the encrypted codes and to properly synchronize the decryption algorithm to produce the decrypted output pixels. Of course, to properly reproduce encrypted half. tone or color images, a half-tone or color printer is required.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KIMC	Draw Desc	Image
------	-----------	-------

☐ 33. Document ID: US 5313310 A

L6: Entry 33 of 57

File: USPT

May 17, 1994

DOCUMENT-IDENTIFIER: US 5313310 A

TITLE: Tonal conversion method for pictures

Detailed Description Text (64):

For example, to make original plates for a printed picture which is a halftone picture, namely, original printing plates by using the tonal conversion method of this invention which is based on the tonal conversion formula, it is only necessary to use a conventional system well known in the present field of art. The above plate-making work can be achieved by incorporating a software, which can perform the tonal conversion method of this invention, in a commercial color-separation and halftone scanning system such as an electronic color separation apparatus (color scanner or total scanner) to practise.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KIMC	Draw Desc	Image
------	-----------	-------

☐ 34. Document ID: US 5301271 A

L6: Entry 34 of 57

File: USPT

Apr 5, 1994

DOCUMENT-IDENTIFIER: US 5301271 A

TITLE: Image processing separately processing two-density-level image data and multi-level image data

Detailed Description Text (25):

If it is found in step S32 that the received code is not binary eight-color data but is halftone color data (namely, multi-level color data), addresses of the memory, at which image data of a block (namely, a pixel) to be generated is stored, are calculated by performing the process of FIG. 5. Then, data represented by the code are converted to 8-bit data representing tone-levels of pixels, which may have 256 tone-levels, correspondingly to each of the four colors Y, M, C and K. Further, the 8-bit data are compressed into 4-bit data, which represents 16 tone-levels, by performing a 16-valued (or hexadecimal) dither method. Thus, image data are generated in such a manner that the image data are hexadecimal and are printed at the resolution of 150 dpi, which is equal to one-half that of the printer engine. The 16-valued or hexadecimal image data are represented by using 4 bits. Namely, the image data of each pixel is stored in a storage area comprised of 4 bits. The hexadecimal image data are written to each of the four-color image data memories (namely, each of the Y-, M-, C- and K-image-data memories) 13. Further, halftone image data of each pixel is represented by using 4 bits. Furthermore, a value of 1, which indicates that the image data stored at each bit of the image data memory 13 is halftone image data, is written to the image discrimination memory 14 correspondingly to an address, at which the image data of each pixel is stored, of the image data memory 13. The reason for setting the resolution of the image data as 150 dpi, which is one-half that of the binary eight-color image data, is that the density level of each pixel is represented by 1 bit in case of employing the binary eight-color image data, while that of each pixel is represented by 4 bits in case of employing the hexadecimal-level halftone image data and that namely, the amount of data required for representing the density level of a pixel in case of employing the

hexadecimal-level halftone image data becomes four times that of data required for representing the density level of a pixel in case of employing the binary eight-color image data (namely, the number of bits required for representing the binary eight-color image data of 2.times.2 pixels is equal to that of bits required for representing the halftone image data of a pixel). For instance, if the density level of a pixel is 5, a binary value of 0101 is written to the image data memory 13.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWNC	Draw Desc	Image
------	-----------	-------

☐ 35. Document ID: US 5270805 A

L6: Entry 35 of 57

File: USPT

Dec 14, 1993

DOCUMENT-IDENTIFIER: US 5270805 A

**** See image for Certificate of Correction ****

TITLE: Data communication apparatus for converting data in accordance with a discriminated function of a destination station

Brief Summary Text (12):

It is still another object of the present invention to provide a data communication apparatus which divides character code data and image data into different blocks, further divides an image data block in accordance with image characteristics such as a halftone image or a color image, and communicates the data.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWNC	Draw Desc	Image
------	-----------	-------

☒ 36. Document ID: US 5196834 A

L6: Entry 36 of 57

File: USPT

Mar 23, 1993

DOCUMENT-IDENTIFIER: US 5196834 A

TITLE: Dynamic palette loading opcode system for pixel based display

Brief Summary Text (4):

Personal computers typically employ palette RAMS having sixteen storage locations selectable by four-bit pixel words or having 256 storage locations selectable by eight-bit pixel words. Since the colors are controlled by the values stored in the locations of the palette RAM, the colors in a given image can be varied simply by storing new color values in the storage locations. For this purpose, an I/O channel is provided to load new colors into the palette RAM. The number of colors which can be displayed in a based image is limited by the number of different storage locations in the palette RAM and it is often desirable to be able to display more colors than is permitted by the number of storage locations in the palette RAM. For example, complex photographs may require as many as 50,000 different colors. The conventional solution to the problem of providing more colors is to provide a larger palette RAM with a greater number of storage locations. Software can be used to increase the number of apparent colors by dithering, in which in-between shades of color are created by making patterns of the colors which are available. For example, if dark blue and white were available, a light blue area can be simulated with blue dots on a field of white. In this manner, an illusion of light blue is achieved. This method of showing additional colors is effective for large areas, but the quality of such a system does not equal having the color light blue itself stored in the palette RAM. Moreover, dithering cannot show small details and it cannot represent different shades of light blue satisfactorily.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KUMC	Draw Desc	Image
------	-----------	-------

☐ 37. Document ID: US 5195175 A

L6: Entry 37 of 57

File: USPT

Mar 16, 1993

DOCUMENT-IDENTIFIER: US 5195175 A

TITLE: Image synthesizing system

Drawing Description Text (10):

FIG. 7(b) is a diagram for illustrating an example of a format employed to represent gradation levels of color codes of each color component of a four-color halftone;

Detailed Description Text (11):

This standard (hereunder sometimes referred to as the UEF01 standard) is set to enable data exchange among Color Electric Prepress Systems (CEPS) using magnetic tapes (MT) as media. Here, the color line art data is data compressed by the run length encoding and represents a multicolor character or graphic form by using a pair of a color code which is used as a discriminating code for discriminating what region each pixel belongs to, and its run length. According to the above described standard, colors corresponding to color codes of from 1 to 255 can be basically employed, but a color corresponding to a color code of 0 cannot be employed. This embodiment, however, is adapted to be able to employ the color corresponding to the color code of 0. FIG. 2 illustrates data format employed for the run-length encoding according to the UEF01 standard extended as described above in such a manner to include a color corresponding to color code of 0. A line starting and terminating codes each having a hexadecimal value [0000] which are two bytes long are set at a starting and terminating ends of data of one line, respectively. Incidentally, in the instant specification, the notation [A] indicates that a numeral A is in hexadecimal representation. Further, codes (hereunder referred to as run-length encoding codes) of one line, which are obtained by effecting the run length encoding, are held in a part, which intervenes between the hexadecimal values [0000] at both ends of the data (namely, the run-length encoding codes of one line). Moreover, there are two types of the data format, namely, a short and long formats. In case of using the short data format, codes of which the run lengths range from 1 to 255 can be represented. However, in case of using the long data format, codes of which the run lengths range from 1 to 32767 can be represented. Incidentally, in case where a plurality of lines have the same data (namely, the same run-length encoding codes) as a line immediately prior to these lines has, a line copying code indicating the number of lines having the same data as shown in FIG. 2 is used. For instance, in case of graphic forms of which each pixel has a region discriminating code (namely, a color code) of 0, 1 or 2 as illustrated in FIG. 3, the run-length encoding is effected as illustrated in FIG. 4. In FIG. 5, there is shown a run-length encoding code obtained as the result of this run-length encoding operation. This resultant data indicating the graphic forms of FIG. 3 is stored in the block buffer memory 105. Referring next to FIG. 6, there is shown a flowchart of a program for restoring the region discriminating code of each pixel from the run-length encoding code of FIG. 5, based on the data format of FIG. 2. As illustrated in FIG. 6, a line starting code of data of each line (namely, a hexadecimal code [0000] which is two bytes in length) is first detected by making decisions in steps S1 and S2. Then, if it is found in step S3 that a first byte of input data is not equal to [00], this byte is determined to be a color code. Further, if it is found in step S12 that the next byte is equal to [00], the system judges that the long data format is used and the next two bytes represent the run length of the code. In contrast, if it is found in step S12 that the next byte is not equal to [00], the system judges that the short data format is used and the next byte represents the run length of the code. Then, the color codes of the number which is equal to the run length are repeatedly outputted from the decompression circuit 110 and are stored in the line buffer 115. On the other hand, if it is found

as a result of decisions in steps S12, S13 and S14 that three bytes subsequent to the first byte are equal to [000000], the system judges that this data represents a copy code. In this case, the value of the code determined in step S3 is further determined to be the number of lines (hereunder sometimes referred to as copy lines) having the same data (namely, the number of repetition) and the line buffer outputs the data of lines of the number of repetition in succession. Then, the output data are stored in the block buffer. In contrast, if the first byte of the input data is [00] and the next byte is not equal to [00], the system judges that the short data format is used and a value represented by the second byte of the input data is determined to be the run length. If each of the first and second bytes is equal to [00] and the number of the color codes already outputted does not reach the size of one line in the primary scanning direction (namely, in the X-direction), it is judged that the long data format is used and the number of the color codes already outputted is determined to be the run length. Further, the color codes of the color codes [00] of the number equal to the run length are repeatedly outputted and are stored in the line buffer. However, if each of the first and second bytes is equal to [00] and the number of the color codes already outputted reach the size of one line in the primary scanning (X-) direction, it is judged that the line terminating code is detected and the number of lines of which data should be copied is one. Thus, the data of one line restored by that time is copied onto the block buffer. The above described processing is performed every time run-length encoding codes or data are inputted to the system. Turning back to FIG. 1, the region discriminating codes (i.e., the color codes) of one line among the data representing the characters or graphic forms, which are stored in the block buffer 105 and are compressed by effecting the run-length encoding, are restored in the manner as described by referring to FIG. 6. Thereafter, the restored codes are inputted to the line buffer 115 through the color look-up table unit 111 and the selecting circuit 113. Then, an output of the line buffer 115 is inputted to the block buffer 116. When a copy code is detected in the sequence of the data of lines outputted from the line buffer 115 for storing data of one line, the number of copy lines is inputted from the decompression circuit 110 to an address control circuit 117. Further, when a line terminating code is detected, the number of copy lines (namely, 1 in this case) is similarly inputted to the address control circuit 117. Then, the address control circuit 117 repeatedly performs operations of reading data of one line from the line buffer 115 in accordance with the inputted number of the copy lines and outputting the read data to the block buffer 116. The copying of data from the line buffer 115 to the block buffer 116 and the restoration processing in the decompression circuit 110 are timely controlled in such a manner to be halted for a time when the block buffer 116 become full until some data is read from the buffer 116 to be used in the processing to be effected in the comparison circuit 120. As described previously, the color look-up table unit 111 is provided posterior to the decompression circuit 110 and outputs gradation levels of a four-color halftone, namely, one of a cyanic halftone (a C halftone), a magenta halftone (an M halftone), a yellow halftone (a Y halftone) and a black halftone (a K halftone) in accordance with the region discriminating codes (i.e., the color codes) outputted from the decompression circuit 110. Next, a selecting circuit 113 selects the gradation levels of the four-color halftone preliminarily indicated and outputs the gradation levels of the selected halftone to the selecting circuit 122 for selectively outputting bi-level dot pattern data corresponding to the multi-level photograph or picture.

Detailed Description Text (12):

Incidentally, the color look-up table unit 111 is made up of a random access memory (RAM) which is readable and writable. The contents of the color look-up table unit are preliminarily set before the processing is performed. Further, a read-only memory (ROM) may be used as the color look-up memory 111 in case that there is no need of changing the contents thereof. As is seen from a memory map of FIG. 7(a), data representing 256 gradation levels, each of which is represented by one byte, of each of the C, M, Y and K halftones are continuously stored in the color look-up table unit 111. Two high order bits of data representing a reading address indicate kinds of the four-color halftone (i.e., the C, M, Y and K halftones) and on the other hand eight low order bits thereof indicate gradation levels corresponding to the region discrimination codes (i.e., the color codes) of each pixel. FIG. 7(b) illustrates 1-byte data representing a gradation level of which the value ranges from 0 to 255.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KIMC	Draw Desc	Image
------	-----------	-------

☐ 38. Document ID: US 5057931 A

L6: Entry 38 of 57

File: USPT

Oct 15, 1991

DOCUMENT-IDENTIFIER: US 5057931 A

TITLE: Tonal conversion method of pictures for producing reproduced pictures free of color-fog

Detailed Description Text (66):

For example, to make original plates for a printed picture which is a halftone picture, namely, original printing plates by using the tonal conversion method of this invention which is based on the tonal conversion formula, it is only necessary to use a conventional system well known in the present field of art. The above plate-making work can be achieved by incorporating a software, which can perform the tonal conversion method of this invention, in a commercial color-separation and halftone scanning system such as an electronic color separation apparatus (color scanner or total scanner) to practise.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KIMC	Draw Desc	Image
------	-----------	-------

☐ 39. Document ID: US 4997733 A

L6: Entry 39 of 57

File: USPT

Mar 5, 1991

DOCUMENT-IDENTIFIER: US 4997733 A

**** See image for Certificate of Correction ****

TITLE: Process for the production of photographic masks

Detailed Description Text (5):

The conversion of integrated halftone density readings to percent dot area (% dot value) is given hereinafter in Table C for use in combination with the Examples given further on and constitutes part of the computer software algorithm in automated computation of a suitable selection of (a) halftone colour separation(s) used in the exposure of a particular mask film.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KIMC	Draw Desc	Image
------	-----------	-------

☐ 40. Document ID: US 4956718 A

L6: Entry 40 of 57

File: USPT

Sep 11, 1990

DOCUMENT-IDENTIFIER: US 4956718 A

TITLE: Tonal conversion method for pictures

Detailed Description Text (77):

For example, to make an original plate for a printed picture which is a halftone picture, namely, an original printing plate by using the tonal conversion method of this invention which is based on the tonal conversion formula (1), it is only

necessary to use a conventional system known well in the present field of art. The above plate-making work can be achieved by incorporating a software, which can perform the tonal conversion method of this invention, in a commercial color-separation and halftone scanning system such as an electronic color separation apparatus (color scanner or tonal scanner) to practise.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

RMNC	Draw Desc	Image
------	-----------	-------

☐ 41. Document ID: US 4924323 A

L6: Entry 41 of 57

File: USPT

May 8, 1990

DOCUMENT-IDENTIFIER: US 4924323 A

TITLE: Tonal conversion method for pictures

Detailed Description Text (71):

For example, to make an original plate for a printed picture which is a halftone picture, namely, an original printing plate by using the tonal conversion method of this invention which is based on the formula (1), it is only necessary to use a conventional system known well in the present field of art. The above plate-making work can be achieved by incorporating a software, which can perform the tonal conversion method of this invention, in a commercial color-separation and halftone scanning system such as an electronic color separation apparatus (color scanner or total scanner) to practise.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

RMNC	Draw Desc	Image
------	-----------	-------

☐ 42. Document ID: US 4922349 A

L6: Entry 42 of 57

File: USPT

May 1, 1990

DOCUMENT-IDENTIFIER: US 4922349 A

**** See image for Certificate of Correction ****

TITLE: Data communication apparatus

Brief Summary Text (11):

It is still another object of the present invention to provide a data communication apparatus which divides character code data and image data into different blocks, further divides an image data block in accordance with image characteristics such as a halftone image or a color image, and communicates the data.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

RMNC	Draw Desc	Image
------	-----------	-------

☐ 43. Document ID: US 4768082 A

L6: Entry 43 of 57

File: USPT

Aug 30, 1988

DOCUMENT-IDENTIFIER: US 4768082 A

TITLE: Methods of compressing and reproducing color image data

Brief Summary Text (7):

Now, a number of methods are known for coding the halftone white and black image thus obtained. For coding the color halftone image, a main method is to separately code the three halftone images which are formed from the respective primary color signals R, G and B.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

RWMC	Draw Desc	Image
------	-----------	-------

☐ 44. Document ID: US 4705938 A

L6: Entry 44 of 57

File: USPT

Nov 10, 1987

DOCUMENT-IDENTIFIER: US 4705938 A

TITLE: Method of securing data on a data support

Brief Summary Text (6):

In accordance with conventional recording methods, the individual characters applied in such a manner that they are not different from each other with respect to colour density or the density of magnetic fields. The individual characters merely distinguish from each other by the code indicating their signification. In case of writing characters, the signification content is defined by the shape of the individual characters, in case of a conventional dash-code, however, by the width of the dashes or by the succession of individual dashes of different width. In accordance with the invention, an additional criterion of distinction is provided which e.g. consists of the detection of different contrast values. Thus, when a data support is imprinted, selected individual characters may be imprinted with less density than other individual characters. Upon verification of the data support as to authenticity, the verification device will only determine authenticity in case the data at the predetermined positions have the required physical and/or chemical properties, for example a predetermined half-tone. Printing contrast variations in the order of 20 to 30% cannot be recognized by the human eye, but well distinguished by automatic detection. A code applied by imprinting with different half-tones or colour densities of individual characters with respect to others, will appear as being uniform to the observers, although a machine reading the record will be able to detect the differences. Upon photographic reproduction or copying a printing pattern of this kind, these differences will also be lost, so that the transfer of a printing pattern onto another data support would involve major difficulties. Further, the printing background of the data support may be coloured and may be different from one item to another. Further, a pictured background may be provided. Due to spectral differences, different analog signals may be read the levels and positions of which are detected and used as an additional information.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

RWMC	Draw Desc	Image
------	-----------	-------

☐ 45. Document ID: US 4674861 A

L6: Entry 45 of 57

File: USPT

Jun 23, 1987

DOCUMENT-IDENTIFIER: US 4674861 A

**** See image for Certificate of Correction ****

TITLE: Image processing apparatus

Detailed Description Text (35):

Further, in the present embodiment, if a color image zone on the text image is circular, the zone codes "10" need only be written into a circular zone of the zone

memory. Thus, the threshold pattern can be finely selected with a simple construction and a high quality of image can be reproduced. In the present embodiment, if the input image data is half-tone color image data, the color image threshold pattern is selected by the zone code and the color of the threshold pattern is selected depending on the designated color. Accordingly, an excellent color image is reproduced.

CLAIMS:

2. Apparatus according to claim 1, wherein said color image signal processing means utilizes a plurality of threshold patterns to dither-process the color image signal, one of the threshold patterns being selected in accordance with the code signal.

11. Apparatus according to claim 10, wherein said color image signal processing means utilizes a plurality of threshold patterns to dither-process the color image signal, one of the threshold patterns being selected in accordance with the code signal.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KIMC	Draw Desc	Image
------	-----------	-------

☐ 46. Document ID: US 4571634 A

L6: Entry 46 of 57

File: USPT

Feb 18, 1986

DOCUMENT-IDENTIFIER: US 4571634 A

TITLE: Digital image information compression and decompression method and apparatus

CLAIMS:

1. A method for the compression and decompression of digital image information, for indicating at least two separate color and an half tone color, wherein a code representing a run of pixels can be formed from pixels which are all of one or the other of two colors or from the half tone run formed by an alternation of pixels of the two colors, characterised in that coding is effected separately in respect of a first half-tone run which begins with one color and a second half-tone run which begins with the other color, whereby there are four different types of run.

24. Apparatus according to claim 23, wherein the compression coding means includes a read only memory carrying binary codes of the pixel runs, and address forming means controlled by said recognizing means and said transition defining means for addressing said read only memory, said read only memory comprising two portions, one for compression of runs of only said two basic colors and the other for compression of runs of said two basic colors and said two types of half-tone colors, selecting means being provided to enable said address forming means to address one or other of the two portions of said read only memory.

25. An apparatus according to claim 23, wherein said compression coding means include a read only memory carrying binary codes of the pixel runs of said two basic colors and of said two half-tone runs, and address forming means controlled by said recognizing means and said transition defining means for addressing said read only memory, and comprising an output register for temporarily storing the compression code addressed in said read only memory, and means for recognizing the color of a run subsequent to a half-tone run to alter in said output register the compression code read out from said second section according to the color of said subsequent run.

26. An apparatus according to claim 25, wherein siad decoding means includes a read only memory addressed by said input register, said read only memory including one

portion for the decompression of codes of runs of only said two basic colors and another portion for the decompression of codes of runs of said two basic colors and of said two types of half-tone colors, selecting means being provided for causing said input register to address one of said two portions.

27. An apparatus for the decompression of compression codes of digital image information indicating runs of pixels of at least two separate basic colors and a half-tone color represented by an alternation of pixels of said two basic colors, said half-tone color being coded separately as a first type of half-tone run beginning with one basic color and a second type of half-tone run beginning with the other basic color, said compression codes including two dimensional compression codes selectable according to a group of different modes of compression comprising an input register for receiving the compression codes, decoding means for decoding the compressed code received by said input register, and output means for generating bits corresponding to the pixels of the decoded runs, said decoding means including a first section supplying the information of the length of the decompressed run of pixels and a second section for supplying further information of the basic colors of the pixels of the run subsequent to a half-tone run and the mode of compression, said first section also supplying information indicative of the half-tone run, and an output logic circuit responsive to said further information for additionally controlling the operation of said first section.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
------	-----------	-------

☐ 47. Document ID: US 4469937 A

L6: Entry 47 of 57

File: USPT

Sep 4, 1984

DOCUMENT-IDENTIFIER: US 4469937 A

TITLE: Method of securing data

Brief Summary Text (6):

In accordance with conventional recording methods, the individual characters are applied in such a manner that they are not different from each other with respect to colour density or the density of magnetic fields. The individual characters merely distinguish from each other by the code indicating their signification. In case of writing characters, the signification content is defined by the shape of the individual characters, in case of a conventional dash-code, however, by the width of the dashes or by the succession of individual dashes of different width. In accordance with the invention, an additional criterion of distinction is provided which e.g. consists of the detection of different contrast values. Thus, when a data support is imprinted, selected individual characters may be imprinted with less density than other individual characters. Upon verification of the data support as to authenticity, the verification device will only determine authenticity in case the data at the predetermined positions have the required physical and/or chemical properties, for example a predetermined half-tone. Printing contrast variations in the order of 20 to 30% cannot be recognized by the human eye, but well distinguished by automatic detection. A code applied by imprinting with different half-tones or colour densities of individual characters with respect to others, will appear as being uniform to the observers, although a machine reading the record will be able to detect the differences. Upon photographic reproduction or copying a printing pattern of this kind, these differences will also be lost, so that the transfer of a printing pattern onto another data support would involve major difficulties. Further, the printing background of the data support may be coloured and may be different from one item to another. Further, a pictured background may be provided. Due to spectral differences, different analog signals may be read the levels and positions of which are detected and used as an additional information.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KMNC	Draw Desc	Image
------	-----------	-------

☐ 48. Document ID: US 3742129 A

L6: Entry 48 of 57

File: USPT

Jun 26, 1973

DOCUMENT-IDENTIFIER: US 3742129 A

TITLE: APPARATUS AND METHOD FOR GENERATING HALFTONES FOR IMAGE REPRODUCTION

Detailed Description Text (32):

As a line of dot characters if formed on the face of cathode ray tube 172 it is contemplated that the dot characters will be positioned horizontally by a particular increment H which varies in spacing in accordance with the color of the halftone to be generated. In the case of cyan, the spacing H is 15 decipoints. Although this spacing information may be coded on the computer generated magnetic tape 140 it is contemplated that the information be stored in the character memory 150 so that when a halftone for a particular color is being generated a library or font of dot characters associated with that particular color is available to the character selection circuit together with the correct incremental spacing H. If a single font of characters is used for all colors, a color code may be used to render the typesetter responsive to a register which stores the correct spacing for that color so that the proper spacing is inserted between dot characters.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KMNC	Draw Desc	Image
------	-----------	-------

☐ 49. Document ID: JP 11314408 A

L6: Entry 49 of 57

File: JPAB

Nov 16, 1999

DOCUMENT-IDENTIFIER: JP 11314408 A

TITLE: PRINTER CONTROLLER AND PRINT SYSTEM

Abstract Text (2):

SOLUTION: Printer driver 1 of a host computer delivers a command 3 containing a full-color RGB raster data as an image data. A hardware circuit 5 dedicated for printer control performs color conversion, half-toning and interlacing of the full-color RGB raster received from the driver 1 to produce a binary CMYK raster data from which an image data, i.e., a printer command 7 containing the binary CMYK raster data, is produced. A printer 9 performs printing based on the binary CMYK raster data contained in the printer command 7 from the circuit 5 dedicated for printer control. Software in the printer driver 1 and the printer 9 does not perform color conversion, half-toning and interlacing.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KMNC	Draw Desc	Image
------	-----------	-------

☐ 50. Document ID: JP 05236270 A

L6: Entry 50 of 57

File: JPAB

Sep 10, 1993

DOCUMENT-IDENTIFIER: JP 05236270 A

TITLE: COLOR PICTURE PROCESSING UNIT

Abstract Text (1):

PURPOSE: To obtain a color picture in the mode suitable for each characteristic of areas by forming a picture in response to a code signal representing whether an area on a formed color picture is a color halftone picture area or a solid color area.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

NUMC	Draw Desc	Image
------	-----------	-------

[Generate Collection](#)[Print](#)

Term	Documents
COLOR	676096
COLOUR	301624
COLOURS	39335
COLORS	182491
COLOUR	301624
COLOURS	39335
COLOR	676096
COLORS	182491
SOFTWARE	349391
SOFTWARES	1635
CODE	1874801
(((COLOR OR COLOUR OR MULTICOLOR\$3 OR (MULTI\$3 ADJ1 COLOR\$3) OR MULTICOLOUR\$3 OR (MULTI\$3 ADJ1 COLOUR\$3)) NEAR2 (DITHER\$3 OR HALFTON\$E OR HALF-TON\$3)) WITH (SOFTWARE OR CODE)).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	57

[There are more results than shown above. Click here to view the entire set.](#)

Display Format:

-

[Change Format](#)[Previous Page](#)[Next Page](#)

WEST

[Generate Collection](#)[Print](#)

Search Results - Record(s) 51 through 57 of 57 returned.

☐ 51. Document ID: JP 01295853 A

L6: Entry 51 of 57

File: JPAB

Nov 29, 1989

DOCUMENT-IDENTIFIER: JP 01295853 A
TITLE: COLOR IMAGE EDITING APPARATUS

Abstract Text (2):

CONSTITUTION: A RAM table 6 in which function codes showing processing kinds such as erasure, extraction, color conversion, halftone photography or the like are preliminarily stored is connected to an image processing circuit 5 so as to perform respective processings corresponding to the function codes read from the RAM table 6. A standard color table 8 and a registered color table 9 are connected to the image processing circuit 5 and, for example, the dot patterns corresponding to the respective colorant densities of colors to be outputted at the time of color conversion are stored in the color tables 8, 9. The standard color table 8 is constituted of a ROM and each dot pattern is fixed but the registered color table 9 is constituted of a RAM and the dot pattern can be alterable from the outside.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

K00C	Draw Desc	Image
------	-----------	-------

☐ 52. Document ID: US 6538762 B1 EP 938041 A2 JP 11314408 A

L6: Entry 52 of 57

File: DWPI

Mar 25, 2003

DERWENT-ACC-NO: 1999-470912
DERWENT-WEEK: 200325
COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Printer control technique performing high speed printing though use of inexpensive equipment and without heavy workload on CPU of host computer in environment where low speed printer is used

Basic Abstract Text (1):

NOVELTY - System has printer control-only circuit generating a printer command including as image data binary CMYK raster data. The printer performs printing operations on the basis of the CMYK binary raster data in the printer command from the printer control-only circuit (5). Software stored in the printer driver and the printer do not perform any color conversion, half-toning and interlacing operations.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

K00C	Draw Desc	Image
------	-----------	-------

☐ 53. Document ID: AU 9228336 A

L6: Entry 53 of 57

File: DWPI

May 20, 1993

DERWENT-ACC-NO: 1993-214579

DERWENT-WEEK: 199327
COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Simulated halftone colour imaging - scanning subject to obtain multi-chrome coded signals corresp. to image pixels, grouping signals into monochrome sets of strips corresp. to primary colours and superimposing sets on white background

Standard Title Terms (1):

SIMULATE HALFTONE COLOUR IMAGE SCAN SUBJECT OBTAIN MULTI CHROME CODE SIGNAL
CORRESPOND IMAGE PIXEL GROUP SIGNAL MONOCHROME SET STRIP CORRESPOND PRIMARY COLOUR
SUPERIMPOSED SET WHITE BACKGROUND

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

RMIC	Draw Desc	Image
------	-----------	-------

☐ 54. Document ID: JP 05056266 A JP 3030965 B2

L6: Entry 54 of 57

File: DWPI

Mar 5, 1993

DERWENT-ACC-NO: 1993-119954
DERWENT-WEEK: 200023
COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Halftone colour image representation in imaging with colour printer - by converting multilevel colour pixel data to colour-component density codes while controlling NoAbstract

Standard Title Terms (1):

HALFTONE COLOUR IMAGE REPRESENT IMAGE COLOUR PRINT CONVERT MULTILEVEL COLOUR PIXEL
DATA COLOUR COMPONENT DENSITY CODE CONTROL NOABSTRACT

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

RMIC	Draw Desc	Image
------	-----------	-------

☐ 55. Document ID: JP 05056265 A

L6: Entry 55 of 57

File: DWPI

Mar 5, 1993

DERWENT-ACC-NO: 1993-119953
DERWENT-WEEK: 199315
COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Halftone colour image representation in imaging with colour printer - by converting multilevel colour pixel data to colour-component density codes while controlling difference between colour image data and data measured w.r.t density codes. NoAbstract

Standard Title Terms (1):

HALFTONE COLOUR IMAGE REPRESENT IMAGE COLOUR PRINT CONVERT MULTILEVEL COLOUR PIXEL
DATA COMPONENT DENSITY CODE CONTROL DIFFER COLOUR IMAGE DATA DATA MEASURE DENSITY
CODE NOABSTRACT

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

RMIC	Draw Desc	Image
------	-----------	-------

☐ 56. Document ID: JP 63067969 A

L6: Entry 56 of 57

File: DWPI

Mar 26, 1988

DERWENT-ACC-NO: 1988-123456
 DERWENT-WEEK: 198818
 COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Encoding multilevel-dithered binary colour image data - combines run-length and encoding codes, and pattern flag in specified order NoAbstract Dwg 10a/13

Standard Title Terms (1):

ENCODE MULTILEVEL DITHER BINARY COLOUR IMAGE DATA COMBINATION RUN LENGTH ENCODE CODE
 PATTERN FLAG SPECIFIED ORDER NOABSTRACT

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWNC	Draw Desc	Image
------	-----------	-------



57. Document ID: JP 63067968 A

L6: Entry 57 of 57

File: DWPI

Mar 26, 1988

DERWENT-ACC-NO: 1988-123455
 DERWENT-WEEK: 198818
 COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Encoding multilevel-dithered binary colour image data - combines run-length and encoding codes in specified order NoAbstract Dwg 10a/13

Standard Title Terms (1):

ENCODE MULTILEVEL DITHER BINARY COLOUR IMAGE DATA COMBINATION RUN LENGTH ENCODE CODE
 SPECIFIED ORDER NOABSTRACT

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWNC	Draw Desc	Image
------	-----------	-------

Generate Collection

Print

Term	Documents
COLOR	676096
COLOUR	301624
COLOURS	39335
COLORS	182491
COLOUR	301624
COLOURS	39335
COLOR	676096
COLORS	182491
SOFTWARE	349391
SOFTWARES	1635
CODE	1874801
((((COLOR OR COLOUR OR MULTICOLORS\$3 OR (MULTI\$3 ADJ1 COLOR\$3) OR MULTICOLOURS\$3 OR (MULTI\$3 ADJ1 COLOUR\$3)) NEAR2 (DITHER\$3 OR HALFTON\$E OR HALF-TON\$3)) WITH (SOFTWARE OR CODE)).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	57

[There are more results than shown above. Click here to view the entire set.](#)

Display Format:

-

Change Format

[Previous Page](#)

[Next Page](#)